Insert logos from all three agencies here

Proposed Plan for Operable Unit 8

Anaconda Copper Mine, Lyon County, NV

Insert 1 or 2 Figures here: State Map with Inset Site Location Map

This Proposed Plan (Plan) describes how the Nevada Division of Environmental Protection (NDEP), as lead agency for implementation of a remedy for the former Arimetco-owned portion of the Anaconda Copper Mine (Site), in Lyon County, Nevada, in conjunction with the U.S. Environmental Protection Agency (EPA) and the Bureau of Land Management (BLM), proposes to protect human health and the environment. The former Arimetco portion of the Site is known as Operable Unit 8 (OU-8). The Plan describes the remedial alternatives that the NDEP, EPA and BLM (the Agencies) are considering and identifies the preferred alternative for implementation. The Plan also explains how the public can participate in this decision, including where to find more information and the date and location of a public hearing. The Agencies request public comment on the Plan and will accept comments at the public hearing and in writing.

PROPOSED PLAN AT A GLANCE

Statement of the Problem:

Acidic drain-down fluids from the OU-8 heap leach pads (HLPs) associated with the former Arimetco mining operations are managed in a system known as the Fluid Management System (FMS). The HLP fluids continue to accumulate in the current FMS ponds, and the ponds are expected to reach capacity in 3-5 years. Additionally, maintaining balanced fluid capacity in the ponds can be challenging due to unpredictable precipitation events, aging conveyance mechanisms between ponds, varying evaporation rates, and salt build up in the ponds, which limits capacity over time. The repeated construction of new ponds is not a sustainable, fiscally responsible long-term remedy to manage the drain-down fluids. The preferred alternative addresses long-term fluids management by minimizing infiltration of precipitation through the HLPs.

Proposed Solution:

The NDEP proposes to reduce the risks of future release of OU-8 HLP drain-down fluids by: (1) continuing active fluids management, evaporation of pond fluids, HLP perimeter ditch rehabilitation, and operations and maintenance (O&M) activities; (2) closing all ponds not needed to manage residual drain-down fluids; (3) regrading/reshaping and capping with an evapotranspiration (ET) soil cover on all surfaces of the HLPs, including side slopes, to further minimize infiltration; and (4) installing stormwater storage and routing features including piping, open channels, and stormwater basins. The basins will be designed and constructed with the long-term objective of connecting to and complementing site-wide stormwater management features in other operable units as they get constructed. This remedy is recommended because it will achieve substantial drain-down fluids reduction by treating the source of the fluid generation through capping the HLPs and significantly reducing volumes and flowrates of fluids to manage.

Your Comments:

You can provide your comments on this Proposed Plan either verbally during a future meeting date to be announced or in writing via letter, fax, or email (see page XX for contact information). The Agencies will consider your comments as we develop our final decision on how to clean up the former Arimetco portion of the site, and we will respond to all comments in a final written document.

Insert Proposed Plan Outline inset text box

SITE BACKGROUND and CHARACTERISTICS

Insert 2 figures in this section: Anaconda OU Map, and OU-8 features map.

Mine History:

Copper in the Yerington District was initially discovered in the 1860s, with large-scale exploration of the porphyry copper system occurring in the early 1900s when the area was organized into a mining district by Empire-Nevada Copper Mining and Smelting Co. Large scale mining operations began at the Site around 1918, as the Nevada Empire Mine. Anaconda Copper Mining Company acquired the Anaconda Mine property (Property) in 1941 and conducted active mining operations from 1953 through 1977. During the 25 - year operational period that Anaconda Copper Mining Company owned and operated the mine, approximately 1.7 billion pounds of copper were produced, resulting in the generation of waste rock, tailings impoundments, and evaporation ponds. Atlantic Richfield Company (ARC) acquired the Property from the Anaconda Copper Mining Company in June 1978 and terminated mining operations at the Site. In 1982 ARC sold its interests in the property to a local resident who leased the Site to a small mining operation. In 1989 all of the former Property was sold, with the exception of the Weed Heights community to Arimetco. Arimetco operated their HLP copper recovery operation using existing ore at the Site and ore from the MacArthur Pit from 1989 to 1999, at which time it ceased all mining operations. The area of former Arimetco operations comprises approximately 250 acres within the entire 3,400-acre Property. During Arimetco's operation of the Site, four phases of HLP construction were completed using dump ore from on-site and off-site sources. High density polyethylene (HDPE) liners were installed under each HLP to collect leachate that was transferred to collection ponds comprising 12 acres of OU-8, which was then conveyed at flow rates exceeding 5,000 gallons per minute to the solvent extraction and electrowinning plant for processing.

Interim Response Actions:

Several site investigations, regulatory actions and interim abatement and fluid management activities have occurred at the Site since the mid-1980s. In December of 1998, NDEP issued a notice of non-compliance to Arimetco, because they lacked a valid reclamation permit and had not posted an adequate surety to ensure reclamation responsibilities would be completed. NDEP also required

Arimetco to cease mining and adding new ore, acid, and make - up water to the HLPs. After Arimetco abandoned the Site in November 1999, the NDEP began managing the HLP drain-down fluids to prevent overflow of fluids from the ponds. When Arimetco left the Site there was an estimated 90 million gallons of solution present in the HLPs and FMS. The solution drain - down rate decreased from 3,300 gpm during active operation to less than 35 gpm in 2002 (ARC, 2002). Current visual observation and measurements of the HLPs drain-down flow rate indicates that, less than 10 gpm (annual average) is leaving the HLPs and collecting in on-site ponds. ARC has performed O&M activities for the OU-8 FMS, and has paid for other investigation and response activities as a result of a subsequent (Date??) Consent Order.

In 2004, NDEP requested that EPA take regulatory lead of the entire Site, including OU-8, with NDEP as support agency. Since then several interim response actions have been performed, with ARC and EPA assuming the costs of those actions. Response actions have included repairing and replacing liners, and in 2006, construction of a new evaporation pond to increase the FMS capacity. Over the years evaporation increased the salts in the system ponds, reducing FMS capacity. Since 2009 ARC has performed continuing O&M for OU-8, as provided for in the 2009 Consent Order. In 2009, a mining company, Singatse Peak Services (SPS) agreed to purchase mineral rights and surface land in OU-8, with the intent of re-processing the recoverable copper in the solids and liquids, as part of an overall site-wide mining plan. EPA initiated an evaluation of remedial alternatives in 2010 and completed the Draft Final Feasibility Study (FS) for the Arimetco Heap Leach Pads and Drain-Down Fluids in 2012. In 2013, in response to diminishing fluid capacity, NDEP contracted a local engineering firm to construct two additional evaporation ponds. In 2015 NDEP contracted a local engineering firm to produce a more detailed Focused Feasibility Study Conceptual Closure Plan (FFS). The FFS is a preliminary engineering design and cost estimate for closing the HLP system and providing a more permanent closure strategy. In 2016 SPS agreed to implement an enhanced evaporation pilot study on the VLT. This study may potentially reduce the fluid in the FMS and demonstrate the effectiveness of operating a full-scale enhanced evaporation operation, delaying the need to construct additional evaporation ponds. This would provide additional time to secure Superfund or other funding sources for design and construction of the approved remedy.

Drain-down Fluid Characteristics:

There are currently five ponds collecting drain-down fluids from the HLPs. The total design capacity of the FMS ponds, allowing for 2 feet of freeboard, is approximately 14.54 million gallons. The system was intended to contain fluids without exceeding the design freeboard storage capacity of the collection pond system, but pond capacity becomes an issue due to the high total dissolved solids in

the copper sulfate solution, which precipitates out causing reduced capacity in the ponds. Drain

- down fluids that remain entrained in the HLPs and exit the HLPs were assessed between 2009 and

2010. Analytical results indicate that metals, including aluminum, antimony, arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, zinc, and radionuclides exceeded either the primary or secondary drinking water

standards. On the basis of visual observations of changes in the viscosity of drain - down fluids and

the generation of copper sulfate salts, the flow - rate and quality of the drain - down fluids fluctuate

seasonally, with the highest metal concentrations in drain - down fluids occurring during the warm

summer months, when fluids have evaporated and dissolved solids concentrations have increased. The

results indicate that lower metals concentrations in drain - down fluids occur during the cool spring

months and coincide with rain events when dissolved solids concentrations are diluted.

SUMMARY OF SITE RISKS

Solid materials and drain-down fluids in OU-8 contain chemicals of concern that pose a potential risk to individuals and wildlife that come into contact with them. Although these chemicals are naturally occurring, residual materials from past ore extraction and processing activities contain these chemicals at higher concentrations than in native rock and soil. EPA evaluated the risk from these chemicals to human in a study called a human health risk assessment. For potential effects to area biota, EPA completed a screening-level ecological risk assessment. A summary of the risk assessment process and the results of the risk assessment for OU-8 are presented in this section of the Proposed Plan.

Human health risk assessments estimate the health risks to people from exposure to mine materials

either now or in the future. For EPA studies, "risk" is the possible harm to people from exposure to chemicals. Two types of health risks for people are evaluated: the risks that can cause cancer and the risks that can cause other health effects. The results of the risk assessment are used to determine if the contamination at a site poses an unacceptable risk to human health or the environment under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The CERCLA regulations include a range of risk numbers to use in deciding if a cleanup action is necessary. EPA regulations establish an "acceptable" extra cancer risk range, from 1 in 10,000 to 1 in 1,000,000 increased likelihood of developing cancer from exposure to a site contaminant over a person's lifetime.

For non-cancer health effects, EPA calculates a hazard quotient (HQ) or hazard index (HI) for both humans and wildlife. A hazard index is the sum of the hazard quotient for several chemicals that have the same or similar effects. The non-cancer hazard index has a threshold below which EPA does not expect any non-cancer health effects. If the HQ or HI is 1 or higher, it is possible that exposure to site contaminants could be a risk to human health or to wildlife.

Human Health Risks:

The risk assessment indicates that arsenic, chromium, radium-228, and uranium-238 are the primary contributors to human health risk from OU-8, based on their concentration, toxicity, locations throughout OU-8, and potential for humans to come into contact with them. At some locations, the chemicals cobalt and copper are also primary contributors to the potential risk from OU-8.

The risk assessment includes evaluation of potential exposure based on current and reasonably anticipated uses of land on and adjacent to OU-8. Access to OU-8 is currently restricted by fencing around the former Anaconda Mine Property (Mine Property), thus limiting the potential for direct contact with these materials. However, future land uses may change and increase exposure. The current landowners of OU-8, Singatse Peak Services and the U.S. Department of Interior, Bureau of Land Management (BLM) indicate mining is a potential future use of these properties. The timing of this potential future use is dependent on uncertain economic factors, including the price of copper on the world market. If SPS determines that mining is not viable and vacates the Mine Property, other reuse options become more likely. Variable OU-8 topography is likely to limit building development on several areas, but there are level areas where future development may bring people into contact with chemicals of concern. Mixed private and federal ownership of the land, along with the presence of contamination also limits re-development potential due to BLM restrictions associated with transfer of contaminated land. Input from the community gained as part of Site Reuse Assessment for the Mine Property completed by EPA in April 2010 indicates a range of potential reuses, with mining considered to be most likely. Current and future adjacent land uses include residential, agricultural, and light industrial and commercial uses.

Based on these current and reasonably anticipated future land uses, risk presented by OU-8 chemicals of concern was evaluated for the following populations onsite: outdoor workers, indoor workers, construction workers, and trespassers. Risk to offsite residents (outside of the Mine Property) was also evaluated.

The risk assessment included an evaluation of the different routes these chemicals may migrate from their current locations towards where each of these groups may come into contact with them, along with route of potential exposure (e.g. inhalation). This is called an exposure pathway evaluation.

Individuals may come into direct contact with the chemicals of concern where they are currently located or the chemicals may be moved from their current locations due to natural weathering processes. Chemicals may then migrate in the air as part of fugitive dust emissions or within surface water runoff. For onsite exposures, the evaluated routes of exposure include ingestion of soil and surface water, dermal (skin) exposure to soil and surface water, inhalation of airborne particulate matter, and external exposure to radiation from radionuclides (including radium and uranium) in soil. For offsite residential exposures, due to the location of the material and where it is likely to be transported, the primary exposure route was considered to be dust inhalation of airborne particulates. Exposure to offsite residents via ingestion, dermal, external radiation from radionuclides in soils and the consumption of **biota** were determined to minor.

Consider inset text box that defines biota

Due to low pH levels (less than or equal to 2.5) in drain-down fluids, irreversible and extensive eye and skin injury could occur if acidic drain-down fluids contact the eyes or skin. Because drain-down fluids are contained in ponds with steep slopes, the exposure of outdoor workers and construction workers to drain-down fluids is not expected as it can be addressed by implementation of a basic Health and Safety Plan.

Agricultural products grown in the area have been tested and there is no evidence that OU-8 or the Anaconda Site has had any impact on agricultural production. Most fields in the area are located far south and east of the Anaconda Site, either hydrologically upgradient or not hydrologically connected to the Site at all.

The results of the risk assessment indicate that estimated cancer risks for all populations, both current and future, are within or below the acceptable range of 1 in 10,000 to 1 in 1,000,000 over a person's lifetime. The maximum carcinogenic risk was 8 in 100,000 to an outdoor worker exposed to OU-8 materials at the one of heap leach pads (VLT Phase IV at the northern end of the Mine Property), primarily through ingestion of soil materials containing arsenic, chromium, radium-228, and uranium-238. Current and future non-cancer risks for all populations except the construction worker were all less than a HI of 1. For construction workers, HIs of between 1 and 3 were indicated due to ingestion of soil containing arsenic, cobalt, and copper.

Ecological Risks:

The screening-level ecological risk assessment identified chemicals of concern in OU-8 surface materials and drain-down solutions present at concentrations that may cause adverse effects to terrestrial wildlife (birds, mammals, bugs, and plants). Aquatic habitat supportive of aquatic species is not present, but the risks of exposure to drain-down fluids by terrestrial wildlife was evaluated. The primary chemicals of concern for wildlife included copper, lead, mercury, molybdenum, selenium, thallium, and zinc from surface materials and copper and uranium from drain-down solutions. However, the assessment found that these potential chronic risks are likely overestimated due to lack of habitat and food resources within OU-8.

The screening-level ecological risk assessment additionally noted that concentrations of aluminum, copper and pH in the fluid evaporation ponds are at levels acutely lethal to birds and mammals. Current bird deterrence measures help to limit the potential for bird exposure to pond fluids, but are not considered a permanent solution.

Risks to Groundwater:

Part of the risk posed by OU-8 is the potential for additional groundwater contamination if drain-down fluids are not continuously controlled. Because the heaps are not covered, precipitation on the heaps continues to generate acidic fluids that require ongoing management in the fluid management system. Failure to reduce the generation or continuously manage these fluids is likely to result in releases to soil and groundwater from the system. Additional contamination of groundwater will increase risk associated with beneficial uses of that groundwater, including its currently designated use as a domestic water supply. Although past releases and potential future releases from OU-8 and other Operable Units at the Site also have the potential to contaminate groundwater, the actual risk evaluation of exposure to contaminated groundwater both on the Mine Property and other areas will be completed separately as part of Operable Unit 1 – Sitewide Groundwater for the Site.

It is the current judgment of the Agencies that the Preferred Alternative identified in this Proposed Plan, or on or the other active measures considered in the Proposed Plan, is necessary to protect public wealth or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) were identified in the May 2012 Draft Final Feasibility Study (FS) and follow up March 2015 Focused Feasibility Study Conceptual Closure Plan (FFS). The RAOs for this remedy are based on protection of human health and ecological receptors. The objectives focus on isolating the contaminant source, prevention of contact with contaminant sources, and limiting further migration of metals contamination from source areas into surrounding soil, surface water and groundwater.

The RAOs are:

1. Prevent ingestion/direct contact with heap leach materials and fluids containing contaminants of concern (COCs) above human health risk-based levels.
2. Minimize exposure to heap leach materials and fluids containing contaminants of ecological concern (COECs) at levels that are harmful to ecological receptors.

These first two objectives are source control objectives, which are established to protect humans and ecological receptors from mine residual materials. This objective will be met by successful covering and erosion control of these materials.

3. Maximize groundwater protection by preventing migration of COCs to groundwater at levels above MCLs.

This objective is an additional source control objective to prevent further degradation of groundwater due to downward migration of chemicals from source areas due to infiltration and leaching of precipitation. This objective will also be met by successful covering and erosion control of mine residual materials.

The area and volume of OU-8 source materials to be controlled was estimated during the OU-8 RI, FS, and FFS using data collected from drilling investigations. The area to be addressed will be refined

during remedial design.

Possibly insert inset text box in this section that outlines the RAOs.

DESCRIPTION OF REMEDIAL ALTERNATIVES

The Agencies selected four remedial alternatives for evaluation based on the data collected to date, and pursuant to the 2012 FS and the 2015 FFS. The agencies have reached agreement on the selection of a Preferred Alternative. Each of the Alternatives, including those evaluated, but rejected, and the Preferred Alternative, are described separately below.
Alternative 1 –FS Alternative 2 –No Further Action Alternative
Alternative 2 –FS Alternative 6a –Passive Evaporation and Top Capping of HLPs, minus concrete basin
Alternative 3 –FS Alternative 8a –Passive Evaporation and Complete Capping of HLPs
Alternative 4 (Preferred Alternative) –Combination of Draft Final FS Alternatives 6a and 8a, plus stormwater management detailed in the FFS.

Each of these alternatives was found to be somewhat to mostly compliant with the RAOs, implementable, and effective, and they range from relatively low to very high cost of implementation and O&M.
Other alternatives in the FS were rejected for final consideration in the FS as either non-compliant, or less cost-effective, or impractical to implement.
The 2015 FFS focused on FS Alternatives 6a and 8a, and after careful evaluation of RAOs, cost estimate analyses, and discussions between NDEP and EPA, it was determined that some combination of FS Alternatives 6a and 8a (PP Alternatives 2 and 3), with the addition of stormwater management, accomplished the goals and objectives, while maintaining a reasonable cost. A brief discussion of each of the first three alternatives is presented below, and a more detailed discussion of the preferred alternative follows.

Insert one figure here, a conceptual drawing of what one closed HLP will look like.

Alternative 1 (FS Alternative 2) –No Further Action Alternative

Alternative 1 provides a baseline for comparing other alternatives. It includes continuation of FMS O&M (active fluids management, passive evaporation of pond fluids, HLP perimeter ditch rehabilitation and O&M, site access controls, and wildlife deterrent measures for all ponds) activities during and after all remedial actions are completed. Institutional controls that restrict human and wildlife contact with materials are inherent in the ongoing O&M activities.

The 30-year Net Present Value (NPV)* cost of Alternative 1 is approximately $2.1 million. The estimated costs are mostly associated with long-term O&M requirements, with $1,740 allocated for capital expenses and $168,500 allocated for annual O&M costs.

Possibly insert inset text box that defines Net Present Value

Alternative 2 (FS Alternative 6a) –Passive Evaporation and Top Capping of all HLPs

Alternative 2 includes all the components include in Alternative 1, plus recording of access restrictions

and engineering controls, replacement of pond liners after 10 years, construction and closure of solids repository for residuals from liner replacement, leak detection monitoring, MNA and sprays/sealants for dust control, construction of 2-acre concrete basin for solids dewatering and management, closure of all existing ponds except the EPA 4-Acre Pond, construct a berm across the 4-Acre Pond to divide it into two cells, replacement of 4-Acre Pond liner after 5 years, pond solids disposed of in new on-site repository, top deck grading and soil cover applied to top deck only, of all HLPs, to minimize infiltration, plus sealants and sprays applied on sideslopes on all HLPs for dust control.

The 30-year NPV cost of Alternative 2 is approximately $29.7 million. The estimated costs are broken down into $21,128,500 for capital expenses and $686,300 allocated for annual O&M expenses.

Alternative 3 (FS Alternative 8a) –Passive Evaporation and Complete Capping of HLPs

Alternative 3 includes all the components of Alternative 2 except spray sealants and construction of a 2-acre concrete basin for solids dewatering/management, plus regrading/reshaping and capping with an ET soil cover all surfaces of the HLPs, including sideslopes, to further minimize infiltration. Alternative 3 also includes closure in place of the 4-Acre Pond.

The 30-year NPV cost of Alternative 3, based on the EPA Draft Final FS estimates, is approximately $58.2 million. The estimated costs are broken down into $51,738,000 for capital expenses and $519,200 allocated for annual O&M expenses.

Alternative 4 (Preferred Alternative) –Combination of FS Alternatives 6a and 8a, plus stormwater management actions as described in the FFS

Alternative 4 includes all the components of Alternative 3, plus stormwater storage and routing including piping, open channels, stormwater basins strategically located, and designed and constructed with the long-term objective of connecting to and complementing site-wide stormwater management features as they get constructed. One of the primary objectives accomplished with the 2015 FFS was a very detailed focus on the engineering design elements and cost estimates, as well as incorporating specific stormwater control features throughout OU-8 that will eventually connect with site-wide stormwater routing and infrastructure. The remedial design costs for Alternative 4 are estimated at approximately one-half of the FS Alternative 8a costs, as substantial savings occurred with local contracting prices and very detailed engineering analysis of material volumes, grading, borrow locations and routing. The savings are also partly attributed to assumptions about construction phasing and completion of all work in 2-3 field seasons. If phasing of the work requires more than 3 field seasons, the costs will rise due to increases in mobilization and demobilization and other costs.

The 30-year NPV cost of Alternative 4, based on the EPA Draft Final FS estimates, is approximately $30.4 million, all of which is allocated to capital costs. This estimate includes engineering design, construction and as-built engineering plan production, but does not include residual FMS O&M costs. O&M costs are anticipated to decrease substantially post-closure, but additional O&M will likely be required in perpetuity.

EVALUATION OF ALTERNATIVES

Discussion of Nine Criteria: Threshold Criteria, Primary Balancing Criteria and Modifying Criteria

Threshold Criteria include:

1. Protection of human health and the environment, specifically:
    a. Prevent ingestion/direct contact with HLP materials and fluids containing contaminants of concern (COCs) above human health risk-based levels;
    b. Minimize exposure to HLP materials and fluids containing contaminants of ecological concern (COECs) at levels that are harmful to ecological receptors; and,
    c. Maximize groundwater protection by preventing migration of COCs to groundwater at levels of MCLs.
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):
    a. Chemical-specific requirements;
    b. Location-specific requirements;
    c. Action-specific requirements; and,
    d. Other criteria, advisories and guidance.

Primary Balancing Criteria include:

1. Long-term effectiveness and permanence;
2. Reduction in toxicity, mobility and volume;
3. Short-term effectiveness;
4. Implementability; and,
5. Cost.

Modifying Criteria include:

1. State acceptance; and,
2. Community acceptance.

Evaluation of Alternatives 1, 2 and 3

Each of the Closure Alternatives were evaluated in the FS, and further focused in the FFS, are outlined above and discussed below. For more detailed analyses of all the remedy alternatives, those retained and those rejected by The Agencies, the reader is directed to the 2012 Draft Final FS, and the 2015 Focused Feasibility Study Conceptual Closure Plan. Each of the Agency-retained Alternatives was scored for its effectiveness in addressing seven of the nine criteria. The community acceptance criteria will be considered during the public comment period for the Proposed Plan. The state acceptance criteria are met as this Proposed Plan is developed and approved by the State, together with the EPA and BLM.

Alternative 1 Evaluation

Some site RAOs would be achieved with Alternative 1. Human health and ecological risks to exposure

of contaminated drain-down fluids and HLP materials would be reduced, but not eliminated, and the risk of leaks and possible groundwater contamination would be reduced, but not eliminated. Alternative 1 would not comply with all ARARs, particularly with State of Nevada groundwater protectiveness. Long-term effectiveness and permanence would not be achieved. The volume of contaminated fluids would be reduced, but the mass of contaminants would remain the same, and no treatment or disposal of contaminated solids is included in this Alternative. Short-term effectiveness remains the same as no additional risk is incurred. Alternative 1 is implementable and is currently being implemented. No additional time for construction and implementation of remedy is associated with Alternative 1.
Overall grade for Alternative 1 is deemed a **D –"Less Favorable"**.

Alternative 2 Evaluation

Human health and ecological risks to exposure would be further increased, but not entirely eliminated. More ARARs would be complied with, particularly by upgrading FMS to meet Nevada Administrative Code requirements, and due to the top cap greatly reducing infiltration of fluids through the HLPs, thus reducing drain-down fluid rates. Contaminant mass and volume would not be greatly reduced. Short-term risks to exposure from dust inhalation would be increased. Alternative 2 is deemed more difficult to implement. Estimated time for construction and implementation of Alternative 2 remedy is 2 years.
Overall grade for Alternative 2 is deemed a **B^- to C^+ -"More Favorable"**.

Alternative 3 Evaluation

Degree of protectiveness is considerably higher with Alternative 3 actions, primarily due to complete cover of HLPs, including sideslopes. Most ARARs would be complied with, and closure requirements would be fulfilled. Long-term effectiveness would be increased and further reduction in infiltration and drain-down fluid rates would be achieved, although contaminant mass and volume may not change. Moderate to high short-term risks would be increased due to additional dirt moving work. Alternative 3 is even more difficult to implement. Estimated time for construction and implementation of Alternative 3 remedy is 2 years.
Overall grade for Alternative 3 is deemed a **B^+ -"Favorable"**.

EVALUATION OF PREFERRED ALTERNATIVE

Alternative 4 Evaluation (CCP Preferred Alternative)

This Alternative is recommended because it will achieve substantial risk reduction by both treating the source materials constituting principal threats at the Site, and providing safe management of remaining material. This combination reduces risk sooner and costs less than the other alternatives. The

Agencies agree that a maximum degree of protectiveness occurs with Alternative 4 actions, although, as in Alternatives 2 and 3, short-term exposure risks are increased. This alternative also more closely adheres to NDEP Bureau of Mining Regulation and Reclamation closure requirements and guidance, which are required at active, permitted mines in Nevada. These closure requirements are also deemed important standards for closure of Abandoned Mine Land sites. Alternative 4 is deemed more implementable than Alternatives 2 and 3 with the routing of non-contact stormwater flow around the HLPs and FMS. Additional cost savings are realized as well due to reduction in O&M tasks related to the closure all ponds not needed to manage residual drain-down fluids. Phasing of Alternative 4 remedy construction and implementation is timed for 2-3 years. At completion of full closure, The Agencies concur that all RAOs would be met. Based on information available, The Agencies believe the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The Agencies expect the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element. Overall grade for Alternative 4 is deemed an **A -"Most Favorable"**.

The Preferred Alternative can change in response to public comment or new information. Additionally, some aspects of closure elements, including, but not limited to, cover design and cover material selection will be specified during the remedial design phase. The details of those design-related elements are not specified in this Proposed Plan.

Insert Inset Text Box here, "Information Repositories" information for all three agencies, and the Yerington Library also.

Public Participation and Solicitation of Comments

The Agencies will accept public comments for thirty (30) days following the release of the Draft Proposed Plan. Persons providing comments should be aware that this public comment period is an opportunity to comment not only on this proposed action, but also on the alternatives that were considered by the agencies. Comments will be accepted by mail, email or fax. Comments should be submitted to the following contacts:

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Insert statement with dates: *"The comment period will run from…"*